UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK
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HARRINGTON GLOBAL OPPORTUNITY FUND,
LIMITED,

                                    Plaintiff,   **21-CV-761 (LGS) (VF)**

                    -against-

CIBC WORLD MARKETS CORP., et al.,   **OPINION & ORDER**

                                    Defendants.   **Redacted Version of**

                                                                 ECF No. 439

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VALERIE FIGUEREDO, United States Magistrate Judge.

By letter motion filed on October 28, 2024, Defendant CIBC World Markets Inc.

("CIBC") and Defendant Merrill Lynch Canada Inc. ("Merrill," and together with CIBC,

"Defendants") seek to compel Plaintiff Harrington Global Opportunity Fund, Limited

("Plaintiff") to produce certain backup material for the expert reports of Dr. Jonathan Brogaard, a

testifying expert for Plaintiff. See ECF No. 400; see also ECF No. 413. Plaintiff opposes the

motion. See ECF Nos. 407, 416, 424. Defendants' motion was discussed at two conferences with

the Court, on November 7, 2024 (see ECF No. 419), and November 21, 2024 (see ECF No. 437

("Tr.")). For the reasons stated herein, Defendants' motion to compel is **GRANTED**.

BACKGROUND[1]

Plaintiff alleges that CIBC and Merrill violated Section 10(b) of the Securities Exchange

Act of 1934 and Rule 10b-5, as well as Section 9(a)(2) of the Exchange Act, by engaging in a

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[1] Familiarity with the factual background of this case is presumed. See Harrington Glob.
Opportunity Fund, Ltd. v. CIBC World Markets Corp., 585 F. Supp. 3d 405 (S.D.N.Y. 2022); see
also id., No. 21 Civ. 761 (LGS), 2023 WL 6316252 (S.D.N.Y. Sept. 28, 2023). The facts
recounted herein are those directly relevant to the instant dispute concerning Dr. Brogaard's
expert reports.

cross-border market manipulation scheme known as "spoofing"[2] between January 27, 2016, and November 15, 2016. See, e.g., ECF No. 133, ¶¶ 1-4.

Dr. Brogaard prepared two expert reports that are at issue in the instant dispute: an expert report assessing whether the trading systems of CIBC were used to conduct spoofing (see ECF No. 400-1, ¶ 6), and an expert report assessing whether the trading systems of Merrill were used to engage in spoofing (see ECF No. 400-2, ¶ 6). As it relates to Merrill, Dr. Brogaard concluded that his analysis showed "███ episodes of spoofing in Concordia stock." ECF No. 400-2, ¶ 9. And as it pertains to CIBC, Dr. Brogaard opined that his analysis showed "███ episodes of spoofing in Concordia stock." ECF No. 400-1, ¶ 9. Dr. Brogaard reached those conclusions by analyzing the trading data produced to Plaintiff by CIBC and Merrill. See, e.g., ECF No. 400-1, ¶¶ 42, 46.

Dr. Brogaard used two methodologies to detect spoofing, which he referred to in his reports as the "Posting" methodology and the "Quantity" methodology, and focused on "downward spoofs," which occur when a trader intends to push the stock price down. See, e.g., ECF No. 400-1, ¶¶ 47-48. Each methodology used its own algorithm, and Dr. Brogaard applied those algorithms to the trading data of CIBC and Merrill. See, e.g., ECF No. 400-1, ¶¶ 58, 72. Dr. Brogaard made certain changes to that trading data before he ran his algorithms. See, e.g., ECF No. 400-1, Ex. 4. As Dr. Brogaard explains, he made "necessary adjustments to the data [provided by Defendants] in order to conduct [his] analysis." See, e.g., ECF No. 400-1, ¶ 7; see also 11/21/24 Hr'g Tr. ("Tr.") at 4.

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[2] Spoofing is a form of market manipulation that involves "bidding or offering with the intent to cancel the bid or offer before execution." Nw. Biotherapeutics, Inc. v. Canaccord Genuity LLC, No. 22 Civ. 10185 (GHW) (GS), 2023 WL 9102400, at *14 (S.D.N.Y. Dec. 29, 2023) (quoting Kessev Tov, LLC v. Doe(s), No. 20 Civ. 4947 (LAH), 2023 WL 4825110, at *4 (N.D. Ill. July 27, 2023)) (internal quotation marks omitted).

Defendants seek production of the underlying computer code that comprises the two algorithms that were used by Dr. Brogaard to detect spoofing "episodes" in the trading data. Defendants also seek production of the "intermediate datasets" used by Dr. Brogaard to conduct his analysis. See ECF No. 400 at 2; see also Tr. at 9-10. In his report, Dr. Brogaard walks through certain assumptions he applied and variables he considered for his Posting and Quantity methodologies in his analysis. See ECF No. 400-1, ¶¶ 53-90. Defendants argue that the description in Dr. Brogaard's report is "extremely high level" and does not permit Defendants to "recreate what [Dr. Brogaard] did and assess whether each episode of spoofing met his criteria." Tr. at 10; see also Tr. at 15 (describing the description in Dr. Brogaard's report as "very confusing and ambiguous"). Although Dr. Brogaard includes a "list of executing purchases," he does not identify the baiting order or order cancellation for each spoofing episode he identifies, and he instead points to, in the case of CIBC, for example, the 24 million orders in CIBC's trading data. Tr. at 6-7, 9. Defendants seek production of this information under Federal Rule of Civil Procedure 26, arguing that it is "facts or data" considered by Dr. Brogaard in forming his opinion and is thus discoverable under Rule 26(a)(2)(B)(ii). See ECF No. 400 at 2.

Plaintiff argues that the two algorithms relied on by Dr. Broogard and the intermediate dataset he used in those algorithms are not "facts or data" under Rule 26. See ECF No. 407 at 1. Plaintiff instead contends that this information is protected from disclosure as work product under Rule 26(b)(4)(C), because the computer code and intermediate dataset was the result of Dr. Brogaard's consultation with Plaintiff's counsel and both reflect the mental impressions of counsel and the preliminary opinions of Dr. Brogaard. ECF No. 407 at 2-3. Plaintiff argues that Dr. Brogaard's report contains the underlying "facts and data" because he provides a "step-by-step analysis" of his two methodologies and how he applied those methodologies to the trading

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data. Tr. at 5-6, 10. Dr. Brogaard submitted a sworn declaration, where he explains that the

computer code for his two algorithms and the intermediate datasets "are products of the

exchange of ideas, preliminary analysis and decision-making process [he] engaged in with

counsel to understand and interpret Defendants' data." ECF No. 424-1, ¶ 6. In particular, he

points to two elements of the computer code—described as "artifacts" and "impressions"—that

he states contain his preliminary analysis or "direct insight into the collaborative process" with

counsel. Id. ¶¶ 6-7.

Following the conference on November 7, 2024, Plaintiff submitted the computer code to

the Court for *in camera* review.

DISCUSSION

Under Federal Rule of Civil Procedure 26, a party seeking to introduce expert testimony

must provide a written report that includes, in relevant part, "the facts or data considered by the

witness in forming" the expert's opinions. Fed. R. Civ. P. 26(a)(2)(B)(ii). The phrase "facts or

data" was substituted in the 2010 rule amendments for the prior phrase "data and other

information." Fed. R. Civ. P. 26(a)(2)(B) (Advisory Notes to 2010 amendments). Even after the

2010 amendment to Rule 26, "the scope of expert discovery contemplated by Rule 26 is still

expansive." See In re Methyl Tertiary Butyl Ether (MTBE) Prods. Litig., 293 F.R.D. 568, 577

(S.D.N.Y. 2013). "Facts or data" in the rule is to be "interpreted broadly to require disclosure of

any material considered by the expert, from whatever source, that contains factual ingredients."

Howard Univ. v. Borders, No. 20 Civ. 4716 (LJL), 2021 WL 9563256, at *1 (S.D.N.Y. Feb. 1,

2021) (citing and quoting Fed. R. Civ. P. 26(a) Advisory Committee Notes to the 2010

Amendment). To comply with the disclosure requirements, an expert must disclose the "'how'

and 'why' the expert reached" his conclusions. Am. Railcar Indus., Inc. v. GyanSys, Inc., No. 14

Civ. 8533 (JSR), 2017 WL 11501888, at *21 (S.D.N.Y. Nov. 14, 2017) (quoting Great White

Bear, LLC v. Mervyns, LLC, No. 6 Civ. 13358 (RMB) (FM), 2008 WL 2220662, at *2 (S.D.N.Y.

May 27, 2008) and (citing Lava Trading Inc. v. Hartford Fire Ins. Co., No. 3 Civ. 7037 (PRC),

2005 WL 4684238, at *7 (S.D.N.Y. Apr. 11, 2005) (report must contain the "essential details

needed to understand and assess" the expert's conclusions)).

"[D]rafts of any report or disclosure required under Rule 26(a)(2)" and "communications

between the party's attorney and any witness required to provide a report under Rule

26(a)(2)(B)" are not subject to Rule 26's disclosure requirement. Fed. R. Civ. P. 26(b)(4)(B), (C).

An expert's draft report is protected from disclosure "regardless of the form in which the draft is

recorded." Fed. R. Civ. P. 26(b)(4)(B). "Spreadsheets, graphs, presentations, and charts are

protected under Rule 26(b)(4)(B), so long as the documents were prepared by the testifying

expert to be included in draft expert reports." Davita Healthcare Partners, Inc. v. United States,

128 Fed. Cl. 584, 591 (Fed. Cl. 2016); see also Deangelis v. Corzine, 2016 WL 93862, at *4-5

(S.D.N.Y. Jan. 7, 2016) (recognizing that an expert's prepared chart used in a draft expert report

was properly protected).

Beginning with the data to which Dr. Brogaard applied his algorithms, Plaintiff

acknowledges that Dr. Brogaard "cleaned" or "manipulated" the trading data provided by

Defendants and applied his algorithm to that data set. Yet Plaintiff has not produced that

intermediate dataset. That trading data is factual material under Rule 26(a)(2)(B)(ii). See In re

MTBE, 293 F.R.D. at 575 (explaining that "factual materials considered by testifying experts in

forming their opinions are not protected work product"). It is not Dr. Brogaard's "draft" or

"preliminary analysis," because the intermediate dataset is the specific trading data to which Dr.

Brogaard applied his algorithms for purposes of reaching an opinion. Further, to the extent that

any "cleaning" of that data by Dr. Brogaard was the product of discussions with counsel, any

work-product protection that applies was waived because Dr. Brogaard considered that factual

material in reaching his opinion. See In re MTBE, 293 F.R.D. at 574 ("[F]urnishing work-

product of a factual nature to a testifying expert constitutes implied waiver of work-product

protection to the extent that the expert considers the facts or data disclosed in forming her

opinion.").

Turning to Dr. Brogaard's algorithms, Plaintiff argues that Dr. Brogaard provided a

detailed explanation concerning the criteria he used to create his two methodologies and

Defendants can therefore recreate the algorithms themselves. According to Plaintiff, Defendants

have the "recipe" necessary to recreate the algorithms and test Dr. Brogaard's opinion that

spoofing episodes occurred during the relevant time period. Tr. at 10. But Dr. Brogaard's

explanation of the components of his algorithms contains numerous ambiguities that do not

permit Defendants to recreate the algorithms and to therefore understand (and challenge) how Dr.

Brogaard identified the spoofing episodes. See Tr. at 13-14, 25-26, 29-30. For instance, in

paragraph 69 of Dr. Brogaard's expert report concerning CIBC, he states that "[t]here were many

times during which a trader executed more than one purchase in a very short period of time,"

which "led to overlapping Spoofing Episodes." ECF No. 400-1, ¶ 69. Dr. Brogaard explains that

"[t]o avoid double counting," he "only allowed for one Spoofing Episode per five second

interval, 2.5 seconds before or after the Executing Purchase." Id. But it is not clear to Defendants

from that description which "executing purchase within a five-second window" was selected by

Dr. Brogaard in his analysis, where there are "multiple episodes that are overlapping." See Tr. at

13-14. Without the two algorithms, Defendants will be unable to understand the development

and foundation for Dr. Brogaard's opinion that ███ spoofing episodes occurred.

Plaintiff contends that the two algorithms are protected work product under Rule 26(b)(4)(C). See ECF No. 407 at 2. Dr. Brogaard explains that the algorithms contain "artifacts," which are "ancillary code and comments that still exist in the algorithm but are not used" and are "remnants of [his] preliminary analysis developed in conjunction" with Plaintiff's counsel. See ECF No. 424-1, Ex. 1, ¶ 1; see also id. at ¶ 7. The algorithms also contain "impressions," which is code "that reveals [Dr. Brogaard's] preliminary analysis based on discussions" with Plaintiff's counsel. See ECF No. 424-1, ¶ 8. In his declaration, Dr. Brogaard identifies examples of specific "artifacts" and "impressions" in the algorithms. See ECF No. 424-1, Ex. 1. Some impressions in the algorithms reflect Dr. Brogaard's preliminary analysis, see, e.g., ECF No. 424-1, ¶ 11, and some artifacts reveal alternative scenarios considered and discussed with Plaintiff's counsel, see, e.g., id. ¶ 10.

Even if the algorithms contain alternative theories considered with counsel or Dr. Brogaard's preliminary analysis—which might otherwise be protected from disclosure under Rule 26(b)(4)(B) and (C)—that "preliminary" work product was nevertheless included in the final algorithm Dr. Brogaard used to conduct his analysis and reach his opinions. It is akin to serving a final expert report on an adversary and including the track changes in the final report. Although Rule 26 would not otherwise require disclosure of an expert's prior drafts of his analysis, this is not a circumstance where Dr. Brogaard's prior analysis is housed separately from his final analysis.[3] Consequently, any work-product protection that may have applied was waived by Dr. Brogaard's inclusion of that analysis in the algorithms used to reach his expert opinions.

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[3] Plaintiff's reliance on In re Elysium Health-ChromaDex Litig., No. 17 Civ. 7394 (LJL), 2021 WL 1249223 (S.D.N.Y. Apr. 5, 2021), is misplaced. See ECF No. 424 at 2. In that case, the expert produced various schedule[s] that appeared "to be excerpted and converted from Microsoft Excel format into a static PDF" and showed his calculated damages amounts, but did not show the underlying calculations for those amounts. Id. at 1. In concluding that the

CONCLUSION

For the reasons stated herein, Defendants' letter motion to compel at ECF No. 400 is

GRANTED. The Clerk of Court is respectfully directed to temporarily file this opinion under

seal, with viewing restrictions limited to the Court and the parties. The parties are directed to

review the opinion and provide proposed redactions by **December, 6, 2025**. The Court will

review those redactions and file a redacted copy of this opinion on the docket.

DATED: New York, New York
                November 25, 2024

                                        _____
                                        VALERIE FIGUEREDO
                                        United States Magistrate Judge

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calculations were not discoverable, the Court reasoned that the moving party had not shown that
the calculations did not constitute draft or prior analysis by the expert. Id. at 3. Unlike the
calculations in In re Elysium, the algorithms here are not prior analysis, because Dr. Brogaard
relied on the algorithms to reach his final expert opinion.